

SCHEDULE 4

Maintenance of Franchise Assets

Part 1 – Asset Management Regime

1. Asset Management Regime Principles

In developing the Asset Management Regime, the Franchise will further develop the existing systems and procedures introduced by Serco Docklands Limited and where necessary produce new processes. Publicly Available Specification (PAS) 55 pt 1&2 will be used by the Franchisee as a guide in the development of the following elements of the Asset Management Regime:

- (a) Asset Management Strategy;
- (b) Asset management processes;
- (c) Works management;
- (d) information systems and decision support tools;
- (e) Performance measurement;
- (f) Reporting requirements;
- (g) Audit requirements;
- (h) Priority areas for maintenance effort;
- (i) The process for the development of maintenance procedures; and
- (j) The maintenance organisation.

These sections (a) to (j) above will be integrated into the Asset Management Regime, which will provide the Franchisee with a dynamic maintenance regime directed at maintaining the assets in line with industry best practice and proven standards.

Each section of the Asset Management Regime will consider the demands on the assets over the Franchise Term and will acknowledge the need to balance upgrade, renewal, management and maintenance commitment, for each asset category. The objective of these regimes is to obtain maximum value from DLR Limited's investment in assets and ensure that the Franchisee neither over maintains nor replaces assets when a modification to the maintenance schedules or procedures would maintain that asset in a condition which complies with the Franchisee's obligations under the Franchise Agreement.

The Franchisee will take into consideration the mechanisms by which an asset's condition deteriorates when developing a maintenance strategy for a particular class of asset. In the main, one of two mechanisms dominates, namely deterioration due to usage and deterioration through age. The Franchisee will determine the most appropriate maintenance strategy to adopt for each class of asset.

The Franchisee will consider the asset condition, minimum operating standards, the cost of replacement, the remaining life and the effectiveness of the Asset Maintenance Strategy, when considering whether to renew an asset.

Assets are procured to fulfil a required function and therefore the asset function will be specified as a series of performance based parameters that can be measured. By

measuring these parameters and comparing and monitoring trends and rates of wear the Franchisee is able to obtain an insight into an assets condition and likely life.

At the commencement of the Franchise Term the Franchisee will take a view of the expected life of each class of asset and an estimate of life remaining within the individual assets of that class. By this means the Franchisee will be able to confirm when major asset renewals can be expected. Validation of the wear characteristics of each class of asset will take place to confirm this estimate of asset life and appropriate corrections will be made in the light of experience.

Where modelling of "wear-out" through usage is appropriate and can be undertaken, the results will be used to assist in predicting the effect of various service and usage patterns on the life of the assets and where appropriate, those results can be incorporated into the renewals programme.

The Asset Management System will be used to forecast maintenance requirements on the basis of Vehicle usage. A model to determine maintenance and renewal of track components will be developed by the Franchisee for use by April, 2007. Validation and population of this model will then take place over the Franchise Period.

The Franchisee will recommend renewal of an asset in any one of the following circumstances:

- (a) the cost of maintenance of the Asset exceeds that which can be considered reasonable for that class of asset;
- (b) that the Asset requires replacement as the result of an improvement notice from HMRI;
- (c) that the Asset fails to comply with changes introduced by an Applicable Requirement;
- (d) that the Asset is obsolete and is no longer able to be supported;
- (e) the continuation of the maintenance process will not return an asset within acceptable performance limits;
- (f) that the minimum standards for the class of asset are changed and the Asset no longer complies with the minimum standards required of that asset;
- (g) upon completion of the maintenance action the Asset's reliability is poor or unpredictable;
- (h) the Asset's ability to meet its designed function in the prevailing operational climate is impaired;
- (i) that the Asset has reached its life end and no longer complies with the minimum physical performance standards required of that Asset;
- (j) that the safety / integrity of the Railway is at risk if renewal does not take place.

By following the justification process outlined in (a) to (j) above the Franchisee will ensure that Assets are renewed at the optimum point and the maintenance of each Asset delivers value and performance for DLR Limited.

Management information concerning the assets performance will be gathered and collated on the Asset Management System. This data will be processed and used, along with other performance and operational information, to guide the recommendations and programmes of Capital Replacement that the Franchisee will propose in the Annual Maintenance Plan.

The Franchisee will provide advice as operator and maintainer to DLR Limited at each stage of the supply specification development and will ensure that lessons learned by the Franchisee as the system operator are captured at the earliest stage of a new development.

The Franchisee will further develop responsive and, where practical, balanced procedures that facilitate the selection of the most appropriate maintenance tactic to be applied to each piece of equipment. This flexibility and responsiveness will be facilitated by:

- (a) the continuous provision of relevant and accurate performance data from the Asset Management System;
- (b) the use of the daily performance review team meetings; and
- (c) the technical performance reviews that cover each discipline and sit on a regular basis within each engineering area.

The Franchisee's performance and cost monitoring processes will be designed to deliver optimised whole life costs for each asset and asset replacement will be targeted and designed to maintain and where possible improve system performance.

The Franchisee will review the maintenance procedures, maintenance task instructions and any documented work procedures that Serco Docklands Limited utilised as part of the Franchisee's development of the new Asset Management System. The procedures will be updated as necessary to ensure the principles outlined in this document are incorporated and they remain best practice for modern railway systems.

2. Asset Management Processes

2.1 Introduction

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

2.2 Performance & Condition Measurement & Monitoring

The Franchisee will continue to develop performance and condition measurement and monitoring systems in Vehicle and signalling systems. These will assist in the measurement of the effectiveness of the overall management of assets.

The performance and condition measurement and monitoring systems will consist of specific condition monitoring systems to allow monitoring of asset deterioration to facilitate intervention prior to failure, as well as providing evidence in the event of unavoidable failures.

The Franchisee will continue the process of evaluation of the condition monitoring systems under trial on the Railway to determine the cost-effectiveness of these systems. This process will involve the identification of cost benefits associated with the failure modes that can demonstrably be prevented by the use of the condition monitoring systems, and ensuring that the implementation and ongoing management of the condition monitoring systems is a more cost-effective solution than routine site maintenance inspections.

The Franchisee will continue to develop the existing performance measurement systems, including the use of defined Key Performance Indicators (KPIs) agreed with DLR Limited coupled with a number of internal and external benchmarking exercises. Where possible, the KPI's and other performance measurements will be reported by the Asset Management System and included as part of the Annual Plans.

2.3 **Information and Knowledge Management**

The document control processes that exist within the previous franchise will be reviewed using the principles outlined in this document and if necessary changes will be made to ensure that a comprehensive document control procedure is in place to enable efficient and effective management of technical and operational written information.

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

2.4 **Electronic Information**

Information and data that is kept electronically such as the Asset Management System and emails will be subject to internal control and management by the IT manager. All data will be backed up daily and stored securely in a purpose-designed container. The network manager will facilitate access to this data in the event of catastrophic failures to the network or any of the associated systems that are backed up via the network. This back-up and recovery process will be documented in a company procedure and any software or systems that are added to the network will be compatible with the network and procedures.

2.5 **Change Control Arrangements**

The recommendations generated by Engineering Technical Issue ("**ETI**") investigations, the maintenance review panel and/or any other material change to procedures or schedules will be managed by the implementation of a change control procedure. The current change control process will be reviewed in detail to ensure that all aspects of the Franchisee's approach to change management are incorporated within it.

Without prejudice to the Change Procedures referred to in Part 9 of Schedule 6 of the Franchise Agreement, this change control procedure will ensure that any changes that result from the findings of an ETI or changes generated by any other improvement or review mechanism are formally endorsed and validated by the Franchisee's senior management, comply with all Applicable Requirements, are implemented in a structured way and do not compromise any of the Franchisee's strategic or operational goals.

The following elements will be addressed within the change control procedure:

- Each change will have a manager or Engineer identified as responsible for progressing that change and any required change management documentation.
- Each change will be serially numbered and entered on to a change control register.
- Each change will have a data file opened where all correspondence and documentation related to that change will be kept.
- Standard change management documentation will be produced and will be used as a guide to the management of the change at all stages.
- The change management documentation will ensure that appropriate risk assessment regulatory checks / permissions have been completed prior to the change being actioned.
- The change management documentation will ensure that all stakeholders have been consulted or informed of the change as appropriate.
- The references of any documentation produced in developing the change will be recorded on the change management document.

- The engineering director, the general manager systems and integration, and the head of safety will be required to sign off all changes prior to implementation.
- Where appropriate, and in all cases associated with the modification of the Railway's assets or systems, a formal submission will be made to DLR Limited for the approval of that change.

Each recommendation addressed by the change control procedure will generate an auditable trail, so the progress of that issue can be traced from its origin to the resulting action and notification of all affected staff, passengers and/or other stakeholders.

The following type of change will, as a minimum, be managed by the implementation of the change control procedure:

- The modification of training procedures;
- The change of suppliers or contractors of safety critical equipment; and
- The change of specification of safety critical equipment.

All material changes, and all changes associated with changes or modifications to the Franchise Assets will be fully documented and risk and impact reviews undertaken to confirm that the change does not represent a risk to the Railway. Furthermore changes will be introduced and controlled by the Check Certificate and Modification Notification procedures outlined on the Configuration Management Control documents.

As part of the change control process, any recommended changes to rules, procedures or materials must be confirmed as completed prior to the closure of the change control and ETI processes. The engineering director will confirm closure of these issues in writing.

2.6 **Fault Management**

First line response to failures that occur on the Railway will be the responsibility of the First Line Response Team (FLRTs).

In relation to the Existing Railway the appropriate maintenance department will complete second line failure management.

All faults will be logged on the Asset Management System, for on system failures this will be done by the operations controllers, however all members of the engineering team will have access to the system and will be instructed to record all their work. All system failures will be monitored and analysed by the appropriate maintenance teams. The Asset Management System will enable the operations controllers and maintenance teams to have a consistent view of the status of assets and associated works.

All initial failures that will delay service or impair performance of the assets will continue to be called through the Control Centre where a co-ordinated response will be instigated and managed.

The FLRT will investigate and where practical carryout a repair that will minimise or eliminate further disruption or loss of functionality.

If the FLRT's assessment results in a situation where a repair in situ is not possible or would take excessive time, the procedures for recovery (in the case of a vehicle fault) or alternate working (in the case of systems or infrastructure failure) will be applied.

Second line response will commence when the FLRT's work is completed and a failed vehicle, system or piece of infrastructure has been handed to the appropriate maintenance department for a permanent repair or replacement. These permanent works

will return the failed asset to their fully operational condition and will be planned for completion with minimal disruption to the provision of Services.

Each failure repair will be planned appropriately depending upon the criticality of the system, the availability of staff or contractors, the availability of materials and any economies that may be available by planning works in a vicinity or of a similar nature to coincide.

The competence of members of the FLRT team will be assessed and enhanced training provided as appropriate. (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

2.7 Resolution of Technical Problems

The supervisory management, systems integration and, engineering support positions identified in section 6.4 will provide the technical expertise and support to manage, monitor, develop and implement solutions to any maintenance problems that may develop during the Franchise Term.

The engineering director will be responsible for ensuring that all the maintenance problems highlighted are investigated and acted upon. The responsibility for investigation will be delegated to an engineer of the appropriate discipline.

The methods of highlighting maintenance difficulties will include the following:

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

2.8 Management of Process Control Risks

The Franchisee will develop robust procedures for the review, issue, change and management of technical and operational instructions. The Franchisee will ensure that all documented instructions issued to staff are of the latest issue and contain any revised instructions that may have been generated through advice from the systems component manufacturers or via internal procedures.

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

The Franchisee will develop and enhance a series of purchasing and component management / handling procedures to ensure that the materials used for the maintenance of infrastructure, vehicles and systems are of the appropriate standard to their application, comply with the necessary UK and International standards, and are subject to the required level of goods inward quality control.

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

The Franchisee will maintain and develop a training, competence and development program for all staff involved in maintaining the operational system.

The Franchisee will initiate a series of workplace audits at supervisor and manager level to randomly check the quality of completed work and the accuracy and comprehensiveness of all documentation submitted as part of the task.

3. Works Management

3.1 Planning of Works

The Franchisee will use the new Asset Management System to effectively plan works using the 'Work Manager' module (or similar) throughout the Franchise Term. Whole life asset cost principles will be developed for each asset group.

The progression of the planned workload will be monitored against the current Annual Maintenance Plan to ensure that the levels of performance projected by the Annual Maintenance Plan are delivered. The Franchisee will also review the progression of the Annual Maintenance Plan at the regular performance review meetings where any deviations from the planned schedule, as a result of out of course events, can be managed.

3.2 Management of Contracts

The management of key contracts will be the responsibility of the general manager of the section whose department is meeting their maintenance requirements by placing that contract. These responsibilities will include ensuring that the contract is drafted appropriately to cover all aspects of the task or service being contracted, monitoring the safe execution of that contract, monitoring the quality of the work produced and ensuring that all necessary documentation and certificates are received upon the tasks completion. The finance directors team will manage commercial and legal aspects of the contracts.

These key contracts will include lift and escalator maintenance, rail grinding, tamping, the 7-year rolling programme of painting and PABX maintenance.

To assist the general managers in the management of these contracts the Franchisee will ensure that a management procedure for the control of contractors will be applied. This procedure will clearly define comprehensive processes for appointing and reviewing approved contractors and the procedures for managing these subcontractors.

Areas to be covered in the management procedure will include, but not be limited, to the following:

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

3.3 Cost Control

Cost control within each department will ultimately be the responsibility of the relevant general managers. Managers will ensure that whole life costing principles are adhered to for each asset group and individual asset within these groups. Managers will balance maintenance costs against replacement costs during the life of each asset thereby optimising asset usage throughout the contract period. Managers will, at all times be aware of their responsibility to hand back all assets in accordance with the Asset Condition Requirements.

4. Performance Measurement

4.1 Asset Performance

The Franchisee will set and monitor appropriate performance standards for each Asset.

Each engineer working together with their maintenance and engineering teams will develop comprehensive monitoring and evaluation techniques which will ensure that where possible asset failures are corrected prior to significant service disrupting problems developing on the Railway.

4.2 **Monitoring And Checking**

The Franchisee will develop a monitoring process that is driven by the Asset Management System. The Asset Management System and associated processes will allow comprehensive defect, cause and effect analysis to take place for all systems on a regular basis and will enable the Franchisee to evaluate and improve its response when systems fail.

The Franchisee will introduce weekly technical performance review meetings that will be held within each engineering department. These technical reviews will be in addition to the Managing Directors performance reviews. Each technical performance meeting will analyse the previous week's system and component failures, and in liaison with the operations department will assess the effect that each failure had on all aspects of the Services.

The departmental reviews will identify and monitor key performance indicators and will identify the development of any adverse trends. The Franchisee will be able to promptly develop relevant remedial action plans.

4.3 (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

4.4 (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

5. **Reporting Requirements**

5.1 **The Periodic Franchise Report**

To supplement the Annual Maintenance Plan the Franchisee will report on a period basis against programme in the engineering section of the Franchise report. This will report on the following, as a minimum:

- (a) Vehicle performance and availability;
- (b) Vehicle MDBMA/MDBSI;
- (c) Points;
- (d) Track Circuits;
- (e) Uninterruptible Power Supplies;
- (f) Axle counters;
- (g) Structural Inspection and Maintenance;
- (h) Permanent Way Inspection and Asset Maintenance;
- (i) Power Supply LV and HV;
- (j) Lifts/Escalators; and
- (k) Passenger Information Displays and TVMs.

The above report will be generated by the Asset Management System,

6. **Audit Requirements**

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

6.2 (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

6.3 (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

6.4 (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

6.5 **Priority Areas for Additional Maintenance**

The areas that will require increased effort and will be prioritised are as follows:

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

- (a) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
- (b) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
- (c) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
- (d) Current Rail – The Franchisee will undertake a comprehensive review of current rail condition and replace any areas of concern. It is anticipated that this will result in 'spot' replacement of current rail in areas of high wear, namely current rail ramps and station areas where condition warrants;
- (e) Developing Maintenance Procedures

Within 24 months of Franchise Commencement, all the workshop maintenance procedures and schedules will be reviewed. Such review will ensure that all procedures as a minimum contain the following:

- (i) Detailed instructions concerning how the examination, replacement of consumable or test will be carried out.
- (ii) Pass or fail criteria for all observations, tests and measurements.
- (iii) Guidelines for the appropriate remedial action following a fail result from an observation, test or measurement.
- (iv) The names and/or part numbers of any consumable parts used in the examination.
- (v) Cross references to the appropriate maintenance manual where further information on the system or component will be found.

The Franchisee will, where appropriate, produce controlled procedures and data sheets for tasks that fall outside the routine maintenance cycle. These documents and procedures will assist the maintenance teams in completing tasks such as traction motor replacement and tyre replacement in an efficient and effective manner.

Each maintenance schedule will be produced in the form of a Star-Chart and will display the Maintenance Procedure section number, the section title/description and the checklist indicating the frequency at which that work is carried out;

- (f) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Part 2 – Asset Management Strategy

1. **Asset Management Strategy**

The Asset Management Strategy includes the Planned Maintenance Activities included in part B of this part 2 schedule 4, together with the strategy set out in column 5 of the Asset Condition Requirements.

1.1 **Asset Management Strategy (Vehicles)**

(a) **Vehicle Maintenance Philosophy**

Vehicles and their associated systems are considered to deteriorate primarily through usage. The Franchisee will therefore adopt a maintenance strategy based upon Vehicle distance operated. (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Any changes to an existing regime, for a particular component or system will be made by the Franchisee's vehicle engineers and will be validated independently by the General Manager Systems Integration. The process will consider system performance data and the operating environment on the Railway.

All the Franchisee's asset management decisions including replacement of an asset, system or component and changes to Maintenance Procedures will consider the whole life cost implications of that change. The Franchisee will ensure the review process prior to change will consider the whole life cost with sufficient rigour to determine that best value in terms of performance and value for money continues to be delivered.

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

The Franchisee will ensure throughout the maintenance review process that relevant stakeholders are informed, understand and support the rationale behind its decisions. Stakeholders will include, but not be limited to the Franchisee's material suppliers, service providers, DLR Limited, the Concessionaires, all applicable regulatory authorities and where applicable, passengers. Through this maintenance review, the Franchisee will deliver a customer and performance focused maintenance organisation that is responsive at all levels.

(b) **Shift Patterns**

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

(c) **Vehicle Maintenance Procedures**

All the workshop Maintenance Procedures and schedules will be reviewed and, where necessary, modified. The Maintenance Procedures will record the detailed tasks to be carried out, and the maintenance schedules will detail the frequency at which each task will be completed.

(d) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

1.2 **Asset Management Strategy (Signalling)**

(a) **Policy & Strategy**

This section outlines the policy and strategy by which the Franchise will continue the ongoing process of management review and continuous improvement of signalling maintenance, in order to consistently deliver a high level of performance from the signalling assets in a cost-effective and efficient manner.

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

(b) **Asset Information Systems**

The Franchisee will migrate the FAR and, as appropriate, other data systems onto the Asset Management System.

(c) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

(d) **Management of Failures, Incidents & Non-Conformances**

The Franchisee will continue to develop the existing procedures addressing the following areas:

- (i) Immediate action to be taken upon the observation of non-conformances, incidents or cases of imminent risk.
- (ii) Appropriate means for recording the factual information relating to non-conformances, incidents or cases of imminent risk, including the results of the immediate investigation and, where applicable, subsequent detailed investigation.
- (iii) The process for managing incident investigation, including the type of events to be investigated, the roles, responsibilities and authority of the investigators, arrangements for witness statements, and facilities for storage of evidence.
- (iv) Corrective actions to be taken to address the root cause(s) of identified non-conformances or incidents, in order to prevent or reduce the likelihood of reoccurrence, including identifying both short term and long-term corrective measures, where appropriate.
- (v) Preventative actions to be taken to address the root cause(s) of potential failures or incidents, as a proactive measure before such incidents occur. This includes responding to outputs from planned/preventative maintenance and inspection visits, identification of deteriorating performance from KPIs, and analysis of event and condition monitoring data.
- (vi) The methodology for analysis of non-conformances and incidents, in order to derive KPI measures that can be reviewed against performance targets and benchmarks.

The Franchisee will also continue to develop the existing processes for spares and materials management systems, such that they are readily available to front-line staff when required.

1.3 Asset Management Strategy (Permanent Way)

The permanent way strategy outlines processes and procedures that will deliver a world-class maintenance solution.

The maintenance department will be based at Beckton whilst retaining the ability to work from Poplar depot as tasks and Possession requirements dictate. The team will generally be employed on night shifts, exceptions being engineers track inspections which will be carried out during daylight hours.

(a) Permanent Way Maintenance Philosophy

The permanent way maintenance regime is based upon work arising from regular inspections of the Existing Railway with works being categorised and entered into a workbank contained within the Asset Management System. To achieve this, a programme of weekly patrols of the Existing Railway will be scheduled, arranged into seven discrete routes. Staff will be trained in the detection of defects and monitoring of condition against minimum set standards. Conductor rail maintenance will be based upon the basis of the findings from regular inspection, albeit on a reduced seven week cycle. Works will be categorised, prioritised and entered onto the Asset Management System for resolution.

In order to optimise rail life, maintenance and rail replacement over the period of the Franchise, the Franchisee will implement a balanced rail grinding campaign. This will be based on a periodic survey of the track to assess rail condition. Following analysis of the survey results (which will be made available to DLR Limited), the Franchisee will recommend to DLR Limited the appropriate course of action taking into account the need to balance severity and frequency of grinding versus rail life and implement an agreed works programme for grinding those areas.

In assessing the rail condition and formulating the recommendations for grinding the Franchisee will have regard to the rail conditions and acceptable wear limits set out below and the Maintenance Thresholds as set out in the DLR Maintenance Standard reference MR – 400. If DLR Limited disagrees with the Franchisee's recommendations the Franchisee will prepare a detailed report for DLR Limited justifying it's recommendations in light of the rail condition and limits of acceptable wear set out below, the requirements of the DLR Maintenance Standards and the Franchisee's general maintenance obligations.

If the condition of the rail is such that it has reached the limit of acceptable wear set out below or has breached the Maintenance Thresholds set out in DLR Standard MR – 400 the Franchisee will grind the affected areas of rail, unless DLR Limited, following receipt of a detailed report from the Franchisee justifying the reason not to grind, agrees that such grinding should not be carried out.

Rail Condition	Limits of Acceptable Wear prior to Grinding
Presence of Rolling Contact Fatigue	Maximum allowable crack depth of 2.5 mm
Maximum allowable crack length of 15 mm	

Presence of Rail Corrugations 1) Long Wavelength. For wavelengths of 100m – 300mm the corrugation amplitude should not exceed 0.15mm.
 2) Short Wavelength. For wavelengths of 30mm – 100mm the corrugation amplitude should not exceed 0.06mm

Presence of Sidewear Limit of acceptable wear 5 mm

Presence of Asymmetric Wear Permitted Limit prior to grinding of 2mm measured over 7 – 10 sleeper beds (5.5metres – 7.5metres).

In addition to the above limits, the extent and number of undulations at welds will be a consideration for either discrete hand grinder maintenance actions or a consideration in determining more extensive grinding.

The grinding acceptance criteria will be as per Euronorm13231-3 Railways Applications, Part 3 Acceptance of Rail Grinding, Milling and Planning in track work.

Before any grinding is carried out the track should be checked in to ensure all components are in good working order to the target values quoted in DLR Standard MS-401.

The minimum route kilometres the Franchisee will include in the grinding survey in the first 36 months following Franchise Commencement is set out below.

	North Route	East Route	South Route	West Route	Total (Km)
Tangent track to Curves above 1500m Radius	4.0 km	10.5 km	3.5 km	8.0 km	26.0
Curves between 1500m and 500m radius	3.0 km	5 km	0.0 km	4.0 km	8.5
Curves below 500m radius	1.0 km	5.0 km	2.0 km	2.5 km	10.5
Switches and Crossings (S&C)	22	22	16	18	78 Point ends
Total Route Length	8.0	17.0	5.5	14.5	44.5 km

This grinding will be programmed over a three year cycle with a similar programme (to be developed as part of the Annual Maintenance Plan) to continue during the Franchise Term. Where practicable, the Franchisee will deal with tamping on the system by booking in the grinder and tamper for the same closure weekends/engineering hours.

The Franchisee will as part of the preparation by the Franchisee of the Annual Maintenance Plan meet with DLR Limited to discuss the grinding programme and to agree any amendments to the programme and review the efficacy of the grinding regime based on the grinding carried out in the previous Fee Year...

The railhead of newly installed rail will (as part of the installation Project) be lightly ground (polished) to remove millscale and other imperfections. If the Franchisee does not intend to carry out such work on any new rail it will prepare a detailed report for DLR Limited setting out why such work is not required to be carried out. If DLR Limited agrees with the recommendations of such report the Franchisee will be relieved of this obligation.

The Franchisee will include in the Annual Maintenance Plan a programme for crossing replacement which will ensure crossings are replaced (as necessary) during the first seven years of the Franchise Term. The actual Capital Replacement requirements will be determined from the Asset condition in the field and funded in accordance with the provisions of clause 11 of the Franchise Agreement

The Franchisee will continue with the general inspections and maintenance of the permanent way assets as detailed in MR 400.

The permanent way maintenance procedures and schedules will be subject to constant monitoring and regular review by the Franchisee's maintenance review panel.

The Franchisee will ensure that throughout the maintenance review process relevant stakeholders are consulted and understand and support the rationale behind its decisions. Stakeholders will include, but not be limited to, the Franchisee's staff, material suppliers, service providers, DLR Limited, the Concessionaires and, where applicable, passengers.

1.4 **Asset Management strategy (Structures and Buildings)**

The maintenance and building strategy outlines processes and procedures that will deliver a world-class maintenance solution within this maintenance department.

- (a) The structures team will be co-joined with the present building maintenance team and will focus on the delivery of the Structures Inspections Rolling Programme, the works arising from that programme, the painting rolling programme and station and buildings maintenance. This team will be based at Beckton Depot. **Structures Maintenance Philosophy**

Structures will be maintained on a similar basis to that of the permanent way with a regular principal inspections regime undertaken by suitably qualified technicians trained to identify and categorise defects for subsequent remedial action. Where specialist expertise is required, for example divers to undertake inspections of structures spanning water, this work will be subcontracted to specialist contractors. In addition, discrete packages of work, including contracts for repainting structures, will be sub-contracted and an on-going rolling programme put in hand.

The Franchisee will carry out all inspections and works to the structures stations and bridges in accordance with MR 500.

The Franchisee will deliver (possibly by sub-contracting) a consistent painting programme that will ensure that the Mandated Maintenance Works and Asset Condition Requirements are satisfied. The ex LDDC structures have been included within this specification.

(b) **Underground Structures**

The various assets and sub-systems that are associated with underground structures include:

- (i) Tunnel Structure;
- (ii) Sump areas;
- (iii) Lighting;
- (iv) Phones;
- (v) Track;
- (vi) Signalling;
- (vii) Fire Mains;
- (viii) Ventilations Fans;
- (ix) Radio and Communication systems; and
- (x) Lifts and Escalators

The majority of these assets will be maintained in a similar manner to other infrastructure assets with access being carried out during Engineering Hours and Possessions. The tunnel structure inspections will continue on a four yearly basis. This work, as with under-water structures, will be contracted out to specialist engineers. Tunnel sump pumps will be maintained annually with refurbishment off site on a one in six year basis. In relation to items of equipment and infrastructure included in the Bank Tunnels and Bank Station the responsibilities for inspection, maintenance and renewal will be governed by the terms of the Lease with LUL and the associated provisions of the Franchise Agreement. Where this is the Franchisee's responsibility, the tunnel and station fire mains will be maintained by Franchisee's specialist contractors on an annual basis. Where this is the Franchisee's responsibility, the maintenance of the lighting, phones, track, signalling, radio and communications systems will be undertaken by the Franchisee. .

1.5 **Asset Management Strategy (Automatic Fare Collection, CCTV, Communications)**

The communication maintenance strategy will deliver a world-class maintenance solution within this maintenance department.

The communications team will be responsible for the maintenance of the AFC, CCTV, Passenger Counting System, Telephone System, Radio, Passenger Alarms, PIDs PA, IT Systems and the OTN Network. (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

(a) **Communications Maintenance Philosophy**

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION). In all aspects of systems maintenance, the safety of passengers, staff and equipment will be of primary importance. Any decisions regarding safety critical equipment maintenance will be subject to a safety assessment prior to their implementation.

The decision as to the appropriate maintenance regime will be made by the Franchisee's communications engineer in conjunction with the General Manager, Systems and Rolling Stock and will be validated by the General Manager, Systems Integration. The process will consider system performance data and the operating environment on the DLR system. The maintenance regime required may vary over time as the asset is used but the principles of the Franchisee's philosophy will continue to apply.

The Franchisee will carry out all maintenance and inspections in accordance to MR 201.

(b) **Lifts and Escalators**

The Franchisee will manage the maintenance and response of the lifts and escalators by a performance contract aligned with the performance criteria.

1.6 **Asset Management Strategy (E&M Systems)**

(a) **E&M Systems Maintenance Philosophy**

E&M Systems will be maintained on a period basis in compliance with the relevant DLR Maintenance Standards and having regard to the manufacturer's maintenance standards. In the main, these works will be undertaken and managed by in-house staff, however where appropriate specialist, external specialist contractors will be used to assist in the maintenance of the more specialist equipment about the railway.

Part B – Planned Maintenance Activities

The Franchisee acknowledges and agrees that the Planned Maintenance Activities noted in this Part B of Part 2 of Schedule 4 will be carried out in accordance with the provisions of the Franchise Agreement, DLR Maintenance Standards, the Franchisee's Maintenance Procedures and maintenance task instructions.

ROLLING STOCK

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
Revenue vehicles	All mechanical and Electrical Components and Sub-systems	B Examination: in accordance with Rolling Stock Maintenance Task Instruction MTI-701 and manufacturer's maintenance manuals	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		C Examination: in accordance with Rolling Stock Maintenance Task Instruction MTI-702 and manufacturer's maintenance manuals	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		E Examination in accordance with Rolling Stock Maintenance Task Instruction MTI-703 and manufacturer's maintenance manuals	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		F Examination in accordance with Rolling Stock Maintenance Task Instruction MTI-704 and manufacturer's maintenance manuals:	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		G Examination: in accordance with Rolling Stock Maintenance Task Instruction MTI-705 and manufacturer's maintenance manuals	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		H Examination: in accordance with Rolling Stock Maintenance Task Instruction MTI-706 and manufacturer's maintenance manuals	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		I Examination: in accordance with Rolling Stock Maintenance Task Instruction MTI-707 and manufacturer's maintenance manuals	INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Vehicle exterior	Cleaning	Once every third Service Day
	Vehicle interior	Cleaning	Daily
Battery Locomotive	All	Daily Examination Fortnightly Examination Monthly Examination Quarterly Examination 6 Monthly Examination Yearly Examination 2 Yearly Examination 5 Yearly Examination	Each Day used 2 weeks 4 weeks 13 weeks 26 weeks 52 weeks 104 weeks 260 weeks
Work Vehicles 1960s Shunter	All	Daily Examination	Each Day used

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
(with engine) new		Weekly Examination Monthly Examination Quarterly Examination 6 Monthly Examination Yearly Examination 2 Yearly Examination	1 week 4 weeks 13 weeks 26 weeks 52 weeks 104 weeks
Flat wagons (x4)		Daily Examination Weekly Examination Quarterly Examination 6 Monthly Examination Yearly Examination	Each Day used 1 week 13 weeks 26 weeks 52 weeks
Hopper wagon ballast		Daily Examination Weekly Examination Fortnightly Examination	Each Day used 1 week 2 weeks

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		Monthly Examination Quarterly Examination 6 Monthly Examination Yearly Examination 2 Yearly Examination 5 Yearly Examination	4 weeks 13 weeks 26 weeks 52 weeks 104 weeks 260 weeks
Wickham CT30		Daily Examination Weekly Examination Monthly Examination Quarterly Examination 6 Monthly Examination Yearly Examination 5 Yearly Examination	Each Day used 1 week 4 weeks 13 weeks 26 weeks 52 weeks 260 weeks
Road Rail Vehicle		Daily Examination	Each Day prior to use

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		Annual Examination	52 weeks

PERMANENT WAY

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
General Areas	All	Clean, tidy and free of obstruction and free of graffiti in accordance with DLR Limited Cleaning Specification	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Plain Line	Running Rail	Track Patrol Condition Assessment 7 separate per route	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Detailed Supervisors Track Inspection consisting of 9 no components along each route	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Detailed Engineers Track Inspection consisting of 9 no components along each route	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Versatile Track Recording Trolley, 4 no separate inspection components per route	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Mactrack assessment of ride quality along each traffic route	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		<p>Ultrasonic Testing</p> <p>U1/U2 – Fishplates & Other rail sections</p> <p>U3 – Full rail section</p> <p>U10 – Adjustment Switches</p> <p>U14 – Gauge Corner Cracking</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
		<p>Tamping/Grinding</p> <p>Sidewear readings and flangewear clearances on all check rail</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		<p>curves</p> <p>Sideware and rail depth survey</p>	<p>OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
Plain Line	Depot Rails	<p>Track Patrol Condition Assessment 2 separate depot track patrols</p> <p>Detailed Supervisors Track Inspection consisting of 9 no components along each route</p> <p>Detailed Engineers Track Inspection consisting of 9 no components along each route</p> <p>Versatile Track Recording Trolley, 4 no separate inspection components per route</p> <p>Mactrack assessment of ride quality along each traffic route</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		Ultrasonic Testing U1/U2 – Fishplates & Other rail sections U3 – Full rail section U10 – Adjustment Switches U14 Gauge Corner Cracking	INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Tamping/Grinding	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Check rail/guard	Ensure all bots between the check rail and running rail OR check rail and support are tight	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		<p>Remove and replace all seized bolts</p> <p>Check chog bolts and replace any that have cracked</p> <p>Tighten all checkrail plate bolts</p> <p>Check that all Pandrol keys are fully installed</p> <p>Check that Lubricators, where fitted, are working</p> <p>Remove all litter and debris from flangeway. Measure and record flangeway clearance. A minimum of 3 readings per checkrail are required</p> <p>Measure and record track gauge at flange record points</p> <p>Check for excessive wear of cover checks opposite the nose of all crossings</p> <p>Carry out adjustments to flangeway that are required</p> <p>Check that entry and exit flares are fitted and do not show signs of excessive wear or extraordinary damage</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
Fastenings/Rail Support	Rail Pads	Condition Assessment	As required and arising from inspections

Principal Asset		Component/Sub-system	Maintenance Activity	Frequency
			Replaced during every rail renewal programme	
		Nylon Insulators	Condition Assessment Replaced during every rail renewal programme	As required and arising from inspections
		Insulated Ferrules	Condition Assessment Replaced during every rail renewal programme	As required and arising from inspections
		Pandrol Rail Fasteners	Condition Assessment	As required and arising from inspections
			Replaced during every rail renewal programme	
		Base plates	Condition Assessment Replaced during every rail renewal programme	As required and arising from inspections
		Anchor Bolts	Condition Assessment Replaced during every rail renewal programme	As required and arising from inspections
		Track Structure	Sub-and Track bed: ballast and ballast mat	Voids checked using void-meter

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
Support		<p>Maintenance activity</p> <p>Ballast shall be kept clear of rail heads, slide chairs, baseplates, flangeways, rail fastening and the signal cable on the rail web</p> <p>Where necessary slide chairs and expansion switches will require wiping clean and lubrication applied</p> <p>Ballast in the four foot shall not cover the signal cable</p>	
Track Structure Support	<p>Sub-and</p> <p>Track bed: slab</p> <p>Track Formation</p> <p>Sleepers (conc.)</p>	Condition Assessment	As required and arising from inspections
Track Drainage	<p>Sleepers (timber)</p> <p>Slab track, catchpits and interceptors channel or French drains, piped drains and outfalls</p>	<p>Condition Assessment</p> <p>Also include regular jetting of pipes etc and anti corrosion painting where appropriate</p>	As required and arising from inspections
Track Drainage		Track Drainage Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			INFORMATION)
Bonding & Power Supply	<p>Current collection system</p> <p>(a) Conductor rail to sub-station</p> <p>(b) Reinforcing leakage cc system</p> <p>Conductor rail</p>	<p>Track bonding integrity check</p> <p>SCC and Earth Leakage Current Monitoring</p> <p>As per E&M DLR Maintenance Standards and Maintenance Procedures and Task Instructions</p> <p>Less than 20 amps average earth leakage current for each substation</p> <p>Record the conductor rail test current from Mitre relay and check using a Hall Effect current clamp meter</p> <p>The conductor rail temperature is to be checked using a thermal imaging camera</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		<p>The Engineering vehicle should be driven no faster than 20kph during the test</p> <p>If a joint is hotter than the average temperature of the conductor rail by more than the intervention level indicated in MR-400 then corrective actions must be undertaken within the specified scale</p>	
		<p>Hot joints should be checked with a hand held device</p> <p>Any joints in the conductor rail identified by the test may be inspected using a mirror, whilst energised from the four foot, to check for mechanical damage</p> <p>All joints that fail the test and require remedial action shall be marked on site and recorded on the test results sheet in Appendix 2</p> <p>At the end of the test record the conductor rail test current from Mitre relay and check using a Hall Effect current clamp meter</p>	
	Cable Runs	As and when required resulting from inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Track Components	Track Expansion	Measure and adjust to tolerance as required	
	Joints	Scarf expansion joints maintained	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2))

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			OF THE FREEDOM OF INFORMATION)
		Switch expansion joints maintained	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Depot scarf expansion joints	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Conductor Rail Expansion	Measure and adjust to tolerance as required	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Joint Clip-on covers, Contract Ramps		
Switches and Crossing	Point Switches (Depot)	Strip, clean, lubricate and re-fit	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Point Switches (Main Line)	Strip, clean, lubricate and re-fit	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Crossing (depots) (a) Cast (b) Swing nose (c) Fabricated Crossing (Main Line)	Strip, clean, lubricate and re-fit Cast crossings dye-penetrant testing Strip, clean lubricate and re-fit Cast crossings dye-penetrant testing	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Other	Buffer Stops	Strip, clean, lubricate and re-fit	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Signage	As and when required resulting from inspection	
	Block Joints	These are being removed as part of track replacement programme	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
Other	<p>Platform Gauging and Visual Inspections</p> <p>Vegetation</p>	<p>Platform gauging and visual inspections</p> <p>Visual inspection/planned maintenance</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
Buildings	Fencing	<p>Fencing inspection</p> <p>Review rolling programme to determine due inspections and determine priority for structures to be inspected</p> <p>Where required carry out a site reconnaissance, to determine methodology and equipment required for Inspection. A site specific risk assessment will be carried out to include such factors as working at height, time of day and year, location of structure in relation to roads, footpaths, rivers, canals shops etc</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Noise Barriers		<p>Undertake site survey, including minor maintenance works</p> <p>As and when required resulting from inspection</p> <p>Visual inspection</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
Station Structures	All	<p>Principal Inspection in accordance with MR-500</p> <p>General Inspection in accordance with MR-500</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
		<p>Review Structures Rolling Programme to determine due inspections and determine priority for structures to be inspected. Follow works planning procedure plus obtain approval from planning department for works</p>	

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		<p>Where required carry out a site reconnaissance, to determine methodology and equipment required for Inspection</p> <p>A site specific risk assessment will be carried out to include such factors as working at height, time of day and year, location of structure in relation to roads, footpaths, rivers, canals shops etc</p> <p>Undertake site survey, including minor maintenance works</p>	
	Glazing	Principal Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Station Structures	Platform	<p>General Inspection</p> <p>Structures procedure as above</p> <p>Breakages replaced as and when reported</p> <p>Principal Inspection</p> <p>General Inspection</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			OF THE FREEDOM OF INFORMATION)
	Lighting (incl emergency)	Functional and conditional check as per E&M programme	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Emergency lighting test	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		UPS backed test	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Cleaning	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Replacement	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Lighting masts	Principal Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		<p>General Inspection</p> <p>Structures procedure as above</p>	<p>INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
	Lifts Support Tower and Escalator Truss	<p>Principal Inspection</p> <p>General Inspection</p> <p>Structures procedure as above</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
	Ticket Vending Machines	Functional Test	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Station Structures	Staff and Equipment Rooms	Principal Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Walls, ceiling, doors, windows, furniture, barriers, paving, ramps, steps and stair treads	Structures procedure as above Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Station Structures	Safety Signage	Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	General Signage	Principal Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Mirrors	Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Windbreaks	Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Fire Alarms and Equipment	Functional test on occupied buildings Routine maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			OF THE FREEDOM OF INFORMATION)
			(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	General Areas of Stations	Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Safety Equipment		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Emergency Train Stops		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Station Structures	Staff Facilities		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			INFORMATION)
	Rainwater Goods		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Operations Rooms		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Station Structures	Footbridges	Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Roofs and Canopies	Principal Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Lighting Protection Equipment	Principal Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Notice Board	Principal Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Advertising Displays (where Franchisee is responsible for provision and maintenance)	Principal Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		Structures procedure as above	OF THE FREEDOM OF INFORMATION)
	Stairways, Walkways, Concourses, Approaches, Balustrades	Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Civil Structures	Bridges/Underpasses Viaducts Retaining Walls	Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Arches Troughs		

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Culverts		
	Underwater parts of structures in watercourses	Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Earth Structures	Earthworks, Cuttings, Embankments, Trackside land within the permanent way	Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

UNDERGROUND STRUCTURES, PLANT, EQUIPMENT AND SYSTEMS

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
Tunnels	All	Principal Inspection Assessed by Chartered Engineer	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Tunnel drainage	Principal Inspection Assessed by Chartered Engineer	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Tunnel Linings and Passages	Principal Inspection Assessed by Chartered Engineer	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Tunnel Power Trip System	Functional Test	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Tunnel Telephone		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Switching Equipment		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Drainage Sumps	Submerged pumps		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Gas detector		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Lifting beams, supports	Principal Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2))

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		Assessed by Chartered Engineer	OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Sump Pump Control Systems		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Underground Plant Rooms (to extent that the Franchisee is responsible for maintenance)			(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Fire Mains & Fire Fighting Equipment			(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Access Routes		Principal Inspection Assessed by Chartered Engineer	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			INFORMATION)
Cross Passages		Principal Inspection Assessed by Chartered Engineer	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Lighting	Underground lighting	Clean fittings Replace lamps	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Underground Emergency Lighting		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Ventilation	Ventilation Fans		LUL
	Ventilation Dampers		LUL

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Ventilation Control Systems		Weekly operation test

LAND AND BUILDINGS

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
Adjoining land (not within the permanent way)		Vegetation control	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Hard landscaping		Cleaning	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Vegetation control	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Tree, shrubs, grass, planted areas		Vegetation control	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Landscape gardening as required	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Fences, walls, gates		Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		Painting programme	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Car parks and roads		Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Footpaths		Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Signs, street furniture, public artwork, advertising displays, masts, flagpoles		Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
External Areas Lighting		Cleaning	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Re-Lamping	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Retail Kiosks and public telephones Drains, gutters, sewers		Inspection Principal Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Ancillary buildings on acquired land, including fixtures and fittings		Principal Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

TRACTION/POWER SUPPLY AGREEMENT

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
HV Cables & Routes	11kV incoming feeder circuits	Assist REC with outages	As and when required
Switchgear	11kV switchboards and protection	Switchboard Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Protection Tests	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	11 kV circuit breakers	CB Truck Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	11 kV fuse switch	Switch maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	750V dc switchboards and protection	Protection Tests	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Switchboard Maintenance		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)	

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			OF THE FREEDOM OF INFORMATION)
	75bV dc circuit breakers	CB Truck Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Rectifier and Associated Transformers	Rectifier transformers	Fluid Sampling Transformer Maintenance Fluid Analysis	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Traction Rectifiers	Rectifier Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Auxilliary Transformers	Transformer Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Transformer Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Fluid Analysis > 500kVA	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			INFORMATION)
		Fluid Analysis < 500kVA	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Substation Ancillaries	Battery chargers and batteries	Charger Maintenance Battery Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Diode earthing units	Diode Earthing Unit Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Negative bus bar cubicles	Negative Busbar Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	LV switchboards	Switchboard Maintenance (test and inspection)	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		Protection Tests	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	11kV, 750V dc, control and LV interconnections	Check Interconnections	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Substation Ancillaries	Substation earthing systems	Earth Systems Tests	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Fire protection	Functional test on occupied buildings	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Detection equipment	Routine Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Control	SCADA outstations	Functional Tests	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Telecode 80 Outstations	Functional Tests	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	<p>Trackside isolator control cubicles</p> <p>Intruder alarms</p>	<p>Functional Tests</p> <p>Functional Tests</p>	<p>OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
	<p>Earthing and test equipment</p>	<p>Maintenance</p> <p>Calibration and Tests</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
<p>Trackside</p>	<p>11kV cables and associated pilot cables</p> <p>Positive and negative traction cables</p> <p>Stray current collection system</p>	<p>Route Integrity Check</p> <p>Condition Check</p> <p>Condition Check</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF</p>

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Motorised feeder isolators and control cables	Functional Test Isolator Maintenance	INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Motorised bypass isolators and control cables	Functional Test Isolator Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Trackside isolation indicators and control cables	Functional Test Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Tunnel trip system	Functional Test	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Multi-mode fibre optic cable network	Level Check	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
OTDR – Optical time domain reflector			
Trackside	Running Rail insulation	SCC and Earth Leakage Current Monitoring	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Track bonding	Integrity Check	INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Trackside	Manual trackside isolators	Configuration and General Condition Check	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	RMS slope rail heating	Function Test and Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Control Room	SCADA hardware and software	Masterstation Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	SCADA UPS	De-commissioned; transferred to Signalling UPS	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Mimic panel	Functional Test	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Main UPS	Annual Maintenance And battery checks	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Depot Workshops	Poplar OMC workshop shore supply Poplar BN workshop shore supply Beckton tow trolley shore supply Beckton tow trolley shore supply	Functional Test and Maintenance Functional Test and Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Miscellaneous	Short circuit devices	Visual inspection by the User Department for mechanical damage. Maintenance and Testing to include visual inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		for mechanical damage and an electrical continuity test	OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Short circuit links	Inspection by the User Department	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
			(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Trackside Signalling	Location cases	<p>External checks</p> <p>Confirm all door hinges and padlocks are in good working order and that the doors open and shut correctly and all applicable seals are in tact. Confirm that all troughing lids in the immediate area are secure, undamaged and correctly fitted. Confirm that the location case and base are free of damage. Confirm that the location case is clearly and correctly identified.</p>	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		<p>Internal checks</p> <p>Confirm that the case is free of rubbish, hazards or debris of any kind. Confirm that all cables, cable cleats, cable ties and cable trunking are secure and free of damage. Confirm that all equipment, mounting bars, fixings, terminals and connectors are secure, in good condition and free of dirt and/or corrosion. Confirm that all equipment is clearly and correctly labelled and identified. Where applicable, measure and record the busbar voltage. If not within 20 per cent. of nominal value, investigate and rectify as necessary.</p>	
	Points – (Clamp Locks)	<p>Isolate points by switching to 'manual' on the hydraulic pump unit</p> <p>General Fixings check</p> <p>Hydraulic Pump Unit checks</p> <p>Detection Tests</p>	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Nonk-lockable depot points	Point Heater Checks: isolate points by switching to 'manual' on the hydraulic pump unit; general fixings check; hydraulic pump unit checks; detection tests	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Trackside Signalling	HW Machines	General Fixings check; motor checks; drive check; secondary detector checks; facing point lock tests; point heater checks;	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		point indicator checks	INFORMATION)
	Axle counter systems	Using a calibrated meter set to the ohms range, remove the SK30 detection heads and assembly, examine the SK30 wheel detection heads, remove the yellow cover from the EAK30, measure and record the input supply voltage, measure and record the regulated output voltage, measure and record the rectified receive voltage of detector heads, measure and record the modems transmit voltage	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Point position indicators	As per points	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Tack loops (loop cables)	Examine the terminals, cabling, cards, rack, fuses and all connections for damage, measure the transmit signal voltage (36KHz) to leg A on the STEPL card, measure the transmit signal voltage (36KHz) on the STEPL card, measure the 9KHz monitor signal voltage to the VCC on the STEPL card, measure the receive output voltage (56KHz) on the STEPL card, measure the 9KHz monitor signal voltage on the ESG/U card, connect a current probe to the scope and monitor the loop current on leg A at the fuse wire. The measured value shall be 300-800 mAp-p	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Loop interface equipment		(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Equipment Room	UPS* - Batteries Standby	UPS Checks	(INFORMATION EXEMPT FROM

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	supplies		DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Station controllers – Relays	<p>Ensure that the AC and DC UPS units are working in their normal configuration and both main and standby supplies are present. Ensure the main supply is supplying the UPS cabinets.</p> <p>Remove the main supply by opening the appropriate MCBs in the Control CTF. Confirm that the changeover unit switches automatically to the standby supply, and that the correct indication is shown on the front of the unit. Contact the Control Room and confirm that the correct alarm has been indicated.</p> <p>Restore the main supply by closing the appropriate MCBs in the Control CTF. Confirm that the changover unit switches automatically back to the main supply, and that the correct indication is shown on the front of the unit. Contact the Control Room and confirm that the correct alarm has been indicated.</p> <p>Remove the standby supply by opening the appropriate MCBs in the Power Distribution Unit. Confirm that the Station Controller equipment is operating correctly on the battery supply.</p> <p>Confirm that the AC and DC UPS cabinets and batteries are free of dirt and/or corrosion and all terminals and connections are secure both internally and externally. Rectify or replace as necessary.</p>	

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		<p>Record the time and measure and record the AC and DC battery voltages.</p> <p>Restore the standby power supply by closing the appropriate MCBs in the Power Distribution Unit. Confirm that the correct indication is present on the front panel of the changover unit.</p>	
	<p>Modems</p> <p>Intersigs</p>	<p>Restore the main supply by closing the appropriate MCBs in the Control CTF. Confirm that the changover unit switches automatically back to the main supply, and that the correct indication is shown on the front of the unit.</p> <p>With an isolate scope, measure and cord the Intersig ModemA VCC Tx signal cross terminals 255 and 256 on the Terminal Block/measure and record the Intersig Modem A VCC Rx signal across terminals 257 and 258 on the Terminal Block – measure and record the Intersig Modem B BCC Tx signal across terminals 455 and 456 on the Terminal Block / measure and record the Intersig Modem B VCC Rx signal across terminals 457 and 458 on the Terminal Block</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
<p>Signals in Depots</p>	<p>Signals generally</p>	<p>Examine the signal base, outer lens/cover, all external surfaces, all door hinges and padlocks, signal/route indicator identifications, signal/route indicator identifications, all door seals/seal gaskets, interior of the signal/route indicator, all terminals, links, signal bases, lamps and internal wiring</p> <p>Confirm the lamp voltages</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
<p>Signals in Depot</p>	<p>Track circuit equipment</p>	<p>Examine the terminals, cabling and connections. Examine the track circuit trackside area for damage, security of attachment, loose or missing items and any potential failures, carry out a</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF</p>

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		drop shunt test, measure and record – the Tx voltage on the transmitter terminals, Tx output voltage on the transmitter terminals, Tx TCU input voltage on the Tx TCU terminals, the Tx TCU output voltage on the Tx TCU terminals the voltage across the rails at the transmitter end of the track circuit, Rx voltage on the receiver terminals, Rx TCU input voltage on the Rx TCU terminals, Rx input voltage on the applicable receiver terminals, the Rx relay output on the receiver terminals R+-R-, voltage across the rails at the receiver end of the track circuit.	INFORMATION)
	Bonding	Maintained as and when required resulting from inspection/fault report	
	Track connections	Maintained as and when required resulting from inspection/fault report	
Passenger information services		Confirm that the structure of the Passenger Information Display (PID) is clean, secure and undamaged Confirm that the PID operates correctly in Automatic mode	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Cables	General Spare Capacity	To be maintained as part of the Cable Management Strategy To be maintained as part of the Cable Management Strategy	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			INFORMATION)
UPS Uninterrupted Power Supply		To be maintained as part of the Cable Management Strategy	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Seltrack Signalling New control Centre (NCC) (Hardware)	Vehicle Control Centre (VCC)	At any workstation, view the 'PID Sign Status' screen and confirm the state of the PID messages at each platform display. Report any defects	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Simulator	<p>Confirm that the platform switch is set to Normal</p> <p>Confirm that the top line of the display shows the time of day, the end destination station and the arrival of the next train</p> <p>Confirm that the bottom line of the display alternately shows the end destination station and the arrival times of the second and third trains which are approaching the station</p> <p>Confirm that the PID operates correctly in Manual mode</p>	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
NCC: New Control Centre	Selnet Management Computer (SMC)	Maintained as and when required resulting from inspection/fault report	

LIFTS AND ESCALATORS

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
Lifts		<p>Service Equipment</p> <p>Statutory Inspection CIBSE Guidance on the Management and Maintenance of Lifts and Escalators LG1</p> <p>Statutory Inspection Guidance on the Management and Maintenance for Lifts and Escalators LG10</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
Escalators		<p>Service Equipment</p> <p>Statutory Inspection Guidance on the Management and Maintenance for Lifts and Escalators PM34/45</p> <p>Deep Clean</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
NCC: New Control Centre			

COMMUNICATION SYSTEMS

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
PCM*	Local POP OMC POP NCC Battery Backup	<p>PCM maintenance in accordance with current Maintenance Procedures and Task Instructions</p> <p>Check Harmer Simmons psu, and PCM, for correct front panel indications. Replacing faulty lamps as necessary</p> <p>Check/clean battery terminals</p> <p>Check/tighten battery terminal connections</p>	<p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p> <p>(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)</p>
	Remote BAN ER BED ER Battery Backup	As above	
NCC COMMS UPS		Maintenance in accordance with current Maintenance Procedures and task instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Long Line Public Address (LLPA) Systems	Control Room PCs Microphones Main Station Rack	Maintained/repaired as and when required	

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Outstation Microphones Speakers Battery backup	Battery maintenance Check, and where necessary, clean battery terminals in Battery/charger unit	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
		Check, and where necessary, tighten battery terminal connections Using Ditra test sets P536 and TS3 ensure correct local operation of Outstation controller	
		Using Ditra test P536 for message generation check correct operation of all platform speaker Restore all normal connections to LLPA outstation controller and ensure correct system operation with Control Centre	
Passenger Alarm	Control Room PCs Main station racks Outstation racks Platform passenger points	Check functionality and audio levels	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Battery backup VCRs		
Telephones	PABX OMC Switch NCC Switch	Backup contract with supplier	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	BED Switch Direct Lines BR ROM STR A STR C BAN	Maintained as and when fault occurs	
	CAW		
Telephones	Control Room Feature Phones	Maintained as and when fault occurs	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2))

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Fall Back Phones Office Desk Instruments Platforms weather proof phones Sub-stations Equipment Rooms		OF THE FREEDOM OF INFORMATION)
Closed Circuit TV Systems (Lineside)	Control Rooms PCs Monitors	Maintained as and when fault occurs	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Outstation Fibre Optic receivers Cameras	Check camera and lens are securely fixed Check all terminal connections are tight, re-making cable ends where necessary Clean both sides of housing glass front	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Radio Systems –	Control Room Main station	To ensure equipment is secure and cooling and ventilation fans	(INFORMATION EXEMPT FROM

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
Depot, Station and Train Radio	racks	operational	DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Base stations transmitters	To check drift and recalibrate as necessary	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Handheld radio	Maintained as and when fault occurs	
Tunnel Telephones	Control Room Operator Interface	Operations staff walk through giving condition checks	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Main Station rack	To ensure equipment is secure and cooling fans are operational	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Outstation Rack Tunnel Telephones Battery backup	To ensure cooling fans (if any) are operational	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Cables	Copper	Minimal in use, most fibre	Replaced by OTN System
	Fibre	Maintenance in accordance with current Maintenance Procedures and task instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			INFORMATION)
Civil Infrastructure	Buildings, including fixtures and fittings Drains, gutters and sewers	Principal Inspection General Inspection General Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Security systems	COTAG Admisson Intruder Alarms CCTV	As per manufacturers maintenance manual	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Electrical and Mechanical	Air Pressure	Service	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Ventilation/Heating	Service	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Power Doors	Service	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Other Doors	Service	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Air Conditioning (3 Areas)	Service	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Low Voltage	Test and inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Lighting	Emergency lighting	Test and inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	High mast lighting	Cleaning and re-lamping	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Depot lighting	Cleaning and re-lamping	OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Fire Alarm System		Test Maintenance	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
High Voltage * See Section 3: Traction Supply		Maintenance to be carried out as detailed within the DLR Power Supply Maintenance Standard MS601 and Maintenance Procedures	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Train Wash		Sump clean Inspection	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
		Service	OF THE FREEDOM OF INFORMATION) (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Wheel Lathe Shed	Wheel lathe (Hoesch)	As per manufacturers maintenance manual	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Control Room UPS	As per manufacturers instruction	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Main Shed	10 ton Gantry overhead crane (x 1)	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	6 ton Gantry overhead crane (x 1)	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Jib Crane	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			INFORMATION)
	Portable lifting tackle, slings, hooks, etc	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	700v overhead Tow Trolley equipments, 4 sets (x2) outlets	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Tyre splitter device (Hoesch type RTA 1000DS s/n 6196)	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Tyre spreader	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Tyre press (Fag lucas) Frame, hydraulic pump and press equipment	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Mechanical saw (Qualters & Smith, s/n 01300214)	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Air valve test bench (x1)	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Main bench, s/n F127/1701	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Air drier, s/n GO21 0402	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Air compressor (Broom Wade, 600E)	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Air receiver (Air Receivers, s/n 1394/02)	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Air filter, portable (Horizen, s/n 5246)	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Lifting tables, 220kg ² (x2)	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	(part no 50480)		OF THE FREEDOM OF INFORMATION)
	Dust collector & blow out booth (Donaldson Torit s/n CMP10885)	As per manufacturers instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	In floor lifting jacks x2	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Lifts & hydraulic operating system	As per statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Fork lift truck (Hyster 3-00 s/n C108A03842M)	As per manufacturers instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Side lift truck (Barlow s/n 5292-H)	As per manufacturers instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Fork lift truck (Hyster 1-00)	As per manufacturers instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	s/n A203A03842M)		OF THE FREEDOM OF INFORMATION)
	Battery charges (x6) (Chloride power special)	As per manufacturers instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Tool Vault (Portastor s/n M65242)	Paint 7 yearly	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Plant Room (Boiler Room)	Hand operated lift (Ormic s/n 11669)	As per manufacturers instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Steam cleaner (Kew s/n 9006657)	As per manufacturers instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Gas compressors (x2) (Ingersoll Rand)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	(Ingersoll Rand)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			OF THE FREEDOM OF INFORMATION)
	Dessicant dryer No. 2 (Ingersoll Rand)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Gas receiver (Cool Technology Ltd)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Hot water boilers (x2) (Hamworthy DR70LHAL s/n 6040042)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Hot water boilers (x4) (Hamworthy UR365 s/n 6040042 & 67040050)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Radiant tube gas heaters (x2) (Sonning Heating Co: s/n 344 & 345)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Control panel (Palcon MSP-F/S-105)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Electronics shop (store room)	Transformer 110v	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Second line maintenance equipment, LVC Type 214212002 (Main rack (s/n 20000))	As per manufacturers instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Test box, p/n 214212022 s/n 20000	As per manufacturers instructions	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Test box, p/n 300200033 s/n	As per operational manual	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Bench power supplies (x4) (Farnell)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Second line maintenance equipment; traction device s/n 12800/47921/03	As per operational manual	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Transformer 110v	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Hand operated lift, 700kg s/n 47422	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Main Store Room	Hand operated lift, 250kg (Key, m/n S7211-160 s/n 161604)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Hand operated lift, 200kg (Loc, s/n 39223)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Lathe (Hardinge HVLVH s/n HLV 14188T)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Wet blast machine (Klarti-Klarifier, s/n 7874) & water unit (Vaqua)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Processing unit Type VA QUAD	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Wet blast machine, Vaqua "Kompact" s/n 7873		As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Machine Shop	Pillar drill (Meddings, type MB4, s/n 030827)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Welding machine (Murex s/n 945011947)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	Sheet metal cutter, (Pulman AB, s/n P206 74940-01)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Arc welder, (Transarc s/n T110-00395)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Lathe, (Colchester DL s/n 6400534)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Fly press (s/n 51793)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Horizontal grinder (Jones & Shipman, s/n 42851-08)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Lathe (Harrison 250 s/n M250 254109)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			INFORMATION)
	Vertical milling machine (s/n 848022)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Twin wheel grinder (Union s/n R1377)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Vacuum cleaner (Hoover)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Battery Room	Charging	Twin wheel grinder (Grimston DLR 6400528)	As per manufacturers instructions and statutory regulations
		Vertical milling machine (Head s/n 324406 Base s/n 894090)	As per manufacturers instructions and statutory regulations
		Drill (Meddings S30 s/n 83031)	As per manufacturers instructions and statutory regulations
			(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
			INFORMATION)
	Mechanical saw (s/n 2000-373)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Hydraulic press (Bluepoint s/n 17231293)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Plymouth EF 9000	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Battery chargers (x2) (Chloride s/n 3008563 & 3008564)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
BN Shed	(Mobile vehicle lift T266 18-2)	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
	Air compressor, (Hydrovane, s/n PL99281031) – Receiver	As per manufacturers instructions and statutory regulations	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Principal Asset	Component/Sub-system	Maintenance Activity	Frequency
	RP0656)		INFORMATION)
Buildings, including Fixtures and fittings		Principal Inspection General Inspection Structures Procedure	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Drains, Gutters & Sewers		Principal Inspection General Inspection Structures Procedure	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
Train Wash		Maintenance programme: Sump cleaning Inspection Service	(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Part 3 - Annual Maintenance Plan

1. CONTENTS OF ANNUAL MAINTENANCE PLAN

1.1 The Annual Maintenance Plan for any Franchise Year shall set out the Franchisee's maintenance plan in respect of the Franchise Assets for that year, including the following details in respect of each Franchise Asset (or category of Franchise Assets):

- (a) a statement of performance against previous Annual Maintenance Plans, the Asset Management Regime and the Asset Management Strategy;
- (b) corrective action plan addressing any asset health concerns failures and failures;
- (c) all maintenance activity which the Franchisee considers to be necessary for the forthcoming Fee Year(s);
- (d) periodicity of maintenance and inspection regime;
- (e) proposed major overhaul/refurbishment programme including any Capital Replacement including details of any effects if such Capital Replacement is not undertaken in accordance with the Annual Maintenance Plan including in relation to increased costs and increased maintenance required, the effect in relation to any Applicable Requirement and any material degradation in the Railway which will arise as a result;
- (f) maintenance resource programme;
- (g) provision of mandatory maintenance works;
- (h) requirements, frequency and duration of any extended access to the Railway, or other assets, for the delivery of maintenance services;
- (i) proposed use of third party source of contractors and delivery of maintenance services and levels and methods of supervision to be exercised by the Franchisee;
- (j) requirements of the Concession Agreements;
- (k) requirements of the DLR Contracts and DLR Undertakings; and
- (l) any other information reasonably requested by DLR Limited.

1.2 The Annual Maintenance Plan will also set out in outline form the maintenance plan for the Franchise Assets for the two years following the current year.

2. MANDATORY MAINTENANCE ACTIVITIES

During the Franchise Period, a number of Mandated Maintenance Works will be required to be completed at specific stages. Provision for the completion of these activities must be included within the relevant Annual Maintenance Plan.

Part 4 - Configuration Management Procedures

1. Configuration Management Procedures

- 1.1 The configuration management process will include planning, identifying, controlling and verifying Configuration Items or CI within the Franchise and recording and reporting their status. In addition to the Change Procedures process, the Franchisee will assess the potential impact of making changes to those items and processes, before approving them for action. For the purposes of this document a Configuration Item or CI means an asseted component of a major system the condition of which has an effect on the safety or reliability of the system of which it forms part.
- 1.2 A key aspect of the Asset Register detailed in part 7 to schedule 4 will be the Configuration Management Database ("CMDB") which will form part of the Asset Management System, and will contain details about the attributes and history of each CI and the important relationships between CI's. The CMDB will be a data map of the physical reality of the Franchise Assets, including rolling stock, fixed assets and infrastructure.
- 1.3 The CI's recorded in the CMDB will be those components of the Franchise Assets contributing to the provision of the Services including, but not limited to, the responsible department, equipment, software and documentation. The Asset Management System will maintain an audit trail of changes to the Franchise Assets.
- 1.4 The hazards and safety risks associated with proposed changes will also be assessed. Proposals for change will need to be subjected to a technical review beforehand in accordance with the following SQE 700 series procedures, as updated:
 - (a) QP-703, Software Configuration Control;
 - (b) Q-P-704, Fixed Asset Configuration Control;
 - (c) QP-705, Rolling Stock Configuration Control.

2. Change Management and Configuration Control

- 2.1 (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
- 2.2 Without prejudice to the Change Procedures, the following detailed process to record the configuration of Franchise Assets and for the approval of Modifications will be implemented by the Franchisee.

3. Identify Requirement for Modification

The identification of the need for a Modification will likely arise in response to a deficiency being noted by the train operator, the general manager, in response to performance trend analysis, or as a result of changes to the system that come about as the result of a Project. At this time a formal statement of the requirements of any Modification and justification for its adoption will be produced.

4. (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
5. (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

6. **Review of Safety Assurances of each of the Systems implicated by the Modification and Ensure no Assumption nor Conclusion of any Analysis has been Compromised**

Within the process of evaluation, the assurances as to safety relating to the assets which are the subject to the proposed Modification will be assessed to ensure that each of the relevant safety requirements of that asset remain satisfied. In the event that the effects on safety cannot be adequately evaluated, then the Franchisee will highlight all mitigating actions required to address any exposure or will quantify the extent to which safety or reliability of the system will be compromised by the Modification.

7. **Authorise the Modification as being a New Valid System Configuration with Appropriate Restrictions Identified**

7.1 The approval process will focus specifically on the effects of the Modification on the composite system and will ensure that any variation to interfaces has been properly considered. This process will be concluded with either authority being given for the Modification, or the proposal being rejected on the grounds of cost or its adverse effects on the long term condition of the asset, its reliability or safety.

7.2 The approval level for any Modification will vary. Those Modifications which have no adverse effect on the safety or reliability of the Railway will be approved by the relevant engineer, whilst those Modifications that may have an adverse effect on cost or reliability or which may constitute a change to the DLR Railway Safety Case will require the approval of the GMSI and review in conformance with the Franchisee's Safety Policy and Procedures. The Franchisee shall ensure that final approval for all Modifications is provided by the DLR Chief Engineer (such approval not to be unreasonably withheld or delayed), prior to the Modification being carried out.

8. **Implement Change**

8.1 (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

8.2 (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

8.3 (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

8.4 In order to ensure that only 'valid' configurations are brought into use on the Railway, the Asset Management System will be arranged to record the modification status of each of the Franchise Assets. This process will operate as follows:

9. **Approval of Modification and issuing of Modification Notice**

10. **Recording of new valid Modifications upon the Asset Management System**

This will be the responsibility of the GMSI upon the authorisation of a new Modification.

11. (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

12. **Safety Critical Software Development & Configuration Control**

12.1 Alcatel will be required to provide the necessary assurances required before SELTRAC safety critical software can be introduced into service. Alcatel has in place a number of procedures which detail the development and validation processes to be followed in the development of software. These represent industry best practice and are fully

documented and controlled. By the rigorous adherence to these processes Alcatel seeks to demonstrate that software is safe and fit for purpose.

- 12.2 In order to monitor Alcatel's development and validation procedures, the Franchisee will provide all reasonable support to DLR Limited in the established audit process led by DLR Limited to monitor Alcatel's compliance with the procedures outlined above. The Franchisee will also provide all reasonable support to DLR Limited for the on-going audit of documentation relating to each new major release of software with any shortcomings highlighted to DLR Limited.
- 12.3 In addition to this audit process, Modifications proposed by Alcatel will be reviewed and fully understood by the Franchisee and the results of any test or validation exercise will be seen to be complete and adequate. This review process will be managed by the GMSI.
- 12.4 The authorisation of any new item of safety critical software for use will be the responsibility of the GMSI and the DLR Chief Engineer. In forming a judgement of whether and how a new version of software will be released into service, the GMSI will review design submittals detailing the change, test and validation results and the documentation that will accompany each new release of software. A new release may only be installed on the Railway after each element of this documentation is considered adequate and when the software audit process is sufficiently progressed such that the operational safety and performance of the Railway can be seen to not be compromised.
- 12.5 The authorisation of a new release of safety critical software for service will follow the process outlined below:

13. **Audit of Alcatel's Development Process**

This audit will include a review of the state of completion of records associated with the specification of the safety requirements of the software, status of peer reviews, unit and integration tests and the rigour of any analyses undertaken to mitigate any safety concern. This audit will be undertaken as a part of the on-going audit of the development process, or if appropriate a release specific audit depending upon the size and complexity of the release and the degree of coincidence of the audit and release programmes.

14. **Submittal to the GMSI of Release Documentation and Test and Validation Results**

The test results will be required to include, as a minimum, results of those functional tests undertaken to validate any change and the results of the specified suite of regression tests designed to confirm the integrity of the basic safety functions of the system.

15. **Recommendations Relating to the Lifting or Imposition of Operational Restrictions**

Operational restrictions are implemented in order to accommodate errors or limitations in the functionality of the system. Recommendations to rescind operational restrictions that have implications on system safety will require the authorisation of the GMSI and be subject to review in conformance with the Franchisee's Safety Policy and Procedures.

16. **Approval of New Release by Issuing a Modification Notice (or Software Authorisation Certificate)**

A software authorisation certificate, issued by the GMSI, will detail the release that can be introduced into the field, any restrictions on software compatibility and any additions or deletions to the operational restrictions list. Following authorisation, the software version will be able to be introduced into service when convenient to the Franchisee. The current Software Authorisation Certificates and attendant operational restrictions will be maintained within the Control Room.

17. Installation of Software

- 17.1 The physical introduction of a new release of software onto a specific device, be it VCC, VOBC or SCS will be authorised by a Check Certificate authorising and certifying that specific action.
- 17.2 Procedures will be put in place that will ensure that any change in the version of software loaded onto any specific device be recorded within software configuration records specific to that element of equipment. Such records will be held within the Asset Management System.
- 17.3 Similar processes will be developed for the management and approval of high integrity, non-safety critical software systems including SCADA and communication systems.
- 17.4 Records, in the form of the current software authorisation certificates, of each sub-system will be available at all times available within the control room detailing current and valid configuration and associated operational restrictions.

18. Programme for the Introduction of Configuration Control Procedures

The configuration control system outlined above will be introduced is as follows:

- (a) Process for the approval and implementation of modifications and changes to be formally approved, issued and briefed within three months of the commencement of the Franchise.
- (b) The positions identified within the procedure associated with the approval of modifications and recording of changes to asset configuration to be in post within three months of the commencement of the Franchise.
- (c) The necessary files to record valid software releases and operating restrictions to be in place within three months of the commencement of the Franchise.
- (d) The Asset Management System to be in place to record the modification status and configuration of assets within the timeframe specified in the Franchise Agreement.

Part 5 - Maintenance Procedures

The Maintenance Procedures shall be the following documents which shall be updated by the Franchisee following the date of this Agreement in accordance with the Change Procedures:

- (a) Communications Equipment Maintenance Procedure MP-201 Issue A. (22/04/2005)
- (b) Signalling Maintenance Procedure. MP-301 Issue A. (13/06/2005)
- (c) Permanent Way Maintenance Procedure MP-401 Issue A. (22/08/2005)
- (d) Hot Weather Procedures MP-402 Issue A.
- (e) Structures Inspection & Maintenance Procedure MP-501 Issue A. (13/06/2005)
- (f) Bridge Strike Procedure MP-502 Issue A. (14/06/2005)
- (g) Power Supply Maintenance MP-601 Issue A. (22/08/2005)
- (h) Electrical and Mechanical Systems Maintenance MP-602 Issue A. (22/08/2005)
- (i) Licensing for Electrical Distribution System Staff MP-611 Issue A. (13/06/2005)
- (j) Rolling Stock Maintenance - Light Rail Vehicles MP-701 Issue A.
- (k) Rolling Stock Maintenance - Engineering Vehicles MP-702 Issue A.
- (l) Maintenance and Repair of Workshop Plant and Machinery MP-703 Issue A.

Part 6 – Structures Rolling Programme

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)

Part 7 – Asset Management System

1. Information Systems and decision Support Tools

As part of the process of establishing and implementing the Asset Management Strategy, the Franchisee will collect and collate the necessary information relating to the Franchise Assets necessary to populate the Asset Register. The Franchisee will implement an Asset Register (the "**Asset Register**") which will maintain data on relevant properties of each of the Franchise Assets being managed as part of the Franchise. The Franchisee will replace the current systems and databases with a single integrated Asset Management System (AMS) which will have as its core a single Asset Register covering all of the Franchise Assets excluding Software and Intellectual Property.. The Asset Management System will provide information required to support the decisions that are embodied in the Asset Management Strategy.

To meet the requirements of the Asset Management System the Franchisee will utilise elements of the SAP PLM module.

1.1 The Asset Register Requirement

The Asset Register will be designed with a multi-layered parent – child hierarchical structure that will capture individual assets and their relationship to other **assets** in the same system. Such hierarchies will reflect the structure of the maintenance departments whose responsibility it will be to maintain and update the information in the Asset Management System. A further consideration is the physical or technical relationships between the various asset groups.

The Asset Register will cover all of the Franchise Assets in the following categories:

- Rolling Stock;
- Permanent way;
- Civil Infrastructure;
- Underground structures, plant, equipment and systems;
- Land and buildings;
- Traction/power supply equipment and systems;
- Automatic Train Control equipment and systems;
- Communication Systems;
- Beckton Depots;
- Poplar Depot;
- Lifts and Escalators;

It will replace all of the systems that are listed in the Legacy Applications table below.

Legacy Applications

Software Name Databases & Applications	Type	Supplier	Installed or Upgraded
TACT	Rolling Stock Maintenance System	AEA Technology(Fleet Software)	2001
FAR / S.I.S	Maintenance of Signal & Telecomms	Microsoft Access	1996
Front Line	Maintenance of Electrical & Mechanical, Power Buildings, Services.	Shire Systems	2004
AFC (for ticket machines)	Maintenance	Microsoft Access	1997
Structures	Maintenance	Microsoft Access	1997
Permanent Way	Maintenance	Microsoft Access	1997
Amtech	Electricians	Amtech	1997
Lifts/Escalators	Maintenance	Access	1997

The level of descriptive detail in the Asset Register is to be determined by the Franchisee in consultation with DLR Limited and is to be appropriate to the subject Asset and / or the subject group of Assets and its position in the parent child hierarchy. For some Assets the materials used and general construction methodology used is relevant eg in the case of bridges, a brick arch viaduct or steel beams supported on masonry abutments are appropriate descriptions. However a B stock 2002 Vehicle contains a multitude of different materials, a number of which in practice are of no relevance to the Asset's performance or condition. In developing the listing the Franchisee is required to take these aspects into consideration to ensure the information is of relevance to the Asset's performance and or condition and the Asset Management System is not encumbered by irrelevant data.

The Asset Register will contain information about the relevant Franchise Asset (These will include assets being maintained on behalf of the Franchisee by the Franchisee's subcontractors) and will, , record the following details .

- (a) an unique Asset ID number;
- (b) the location of the Asset;
- (c) the description of the Asset;
- (d) the general construction/material of the Asset; and
- (e) (where known), the year the Asset was built or commissioned into service. (Where the exact information is not readily available or not known, estimated values to be inserted and revised as better knowledge of the asset becomes available)

The level to which the hierarchy will extend will be determined by the Franchisee and depend on the business drivers of the Franchisee and the reporting needs of both the Franchisee and DLR Limited. The Franchisee will use its experience in defining asset hierarchies employed on other rail systems including Metrolink, Merseyrail and Metro Services, Copenhagen when choosing the appropriate hierarchy. An important feature of defining the hierarchical relationships will be to link the Franchise Asset hierarchy with the Franchisee's diverse departmental maintenance functions which will carry out maintenance activities.

The Franchisee will be responsible for determining, identifying and incorporating into the AMS, the mandated fixed asset data, including that relating to the rolling stock data structure and track data structure together with such information relating to the maintenance history of the Franchise Assets as is necessary to ensure a smooth transition and introduction of the Asset Management System. This will be based on the information currently stored on the Legacy applications. The residual historical information will be transferred to a static data base for archive reference should this be required during the Franchise Term.

The table of Sample Asset Descriptions below provides indicative examples of how different types of asset data may be recorded in an Asset Management System. The actual hierarchy, inter-relationships, records and data details are to be developed by the Franchisee. These may vary considerably for different Asset groups and will need to be customised by the Franchisee on an individual basis depending on the particular Asset entry to ensure only data relevant to the particular Asset is entered. It should be noted that the actual descriptions will also have to follow standard SAP terminology where this is prescription eg Location will be Functional Location.

Sample Asset Description Record		(All Asset Types)
Text/Item	Item No	Text/Item
Brief Description	DLR ID No (unique)	Long Description
Model No	Serial No	Type
Location (start & end for linear)	Lead Time	Repair Location
Supplier(s)	Year Built	Manufacturer(s)
Contact Details (S)	Date	Contact Details (M)
Value	Cost	Design Life
Warranty	Valid date	Claims
Material(s)	Supplier No	Revision No
Fleet/Asset No	Registration/Serial No	Date into service
Cost Centre	Stock Level	Owning Department
Service contract details	System	Type (HVAC/fire prot'n)
Notes	Free Text	
Sample Vehicle Maintenance Records		(all asset types)
Odometer reading	Date(s)	Estimated Odo' reading
Certificate of Fitness	Date(s)	Inspections

Sample Asset Description Record		(All Asset Types)
Text/Item	Item No	Text/Item
Examination(s)	Dates	Due Date
Labour expended	Date(s)	Cost Centre(s)
Parts used	Date(s)	Cost Centre(s)
Operating Frequency	Period(s)	Service(s)
Sample Defect Report/Work In Progress Records		
Defect/Failure Description	Number	Impact
Priority	Raised Date	Department Assigned
Caller/Initiator	Started date	Contact Details
Expected Completion	Completed Date	Cost Centre(s)
Skills required	Hours worked	Planned Tasks/Team
Revised defect description	Parts Required	Personnel Involved
Work Type: planned/fault/ad hoc	Free text notes	Meter/counter readings
Sample Track Record		
Long Description/Definition	S & C – type	Plain Line - Curvature
	Cant	Gradient
Condition Measure	Test data records	Condition Assessment
Certificate of Fitness	Date(s)	
Maintenance Routine(s)	Date(s)	Due Date
Inspection(s)	Date(s)	Due Date
Labour expended	Date(s)	Cost Centre(s)
Parts used	Date(s)	Cost Centre(s)
<i>Possible Expansion of records for:</i>		
Rail	Sleepers	Ballast

1.2 Requirements of the Asset Management System

The Asset Register described in 1.1 above will form the basis of the Asset Management System which will provide the maintenance management system required by DLR Limited pursuant to Clause 11.9 the Franchise Agreement. The Franchisee will develop an integrated asset management information system and, record the configuration, status and condition of the Franchise Assets to facilitate the application of best practice in their stewardship. Within two years of the Franchise Commencement Date, the Franchisee in association with DLR Limited will develop descriptions and definitions of asset condition in order to have an agreed understanding of the condition of the Asset e.g. in the case of Structures there are well established definitions such as A1 condition meaning no defects etc.

The Franchisee acknowledges and agrees that the following are high level requirements for the delivery of the Asset Management System.

The following drives these requirements:

- (a) an understanding of the Asset Management Strategy;
- (b) an understanding of the asset management activities necessary to repair, maintain and renew the infrastructure and Rolling Stock.);
- (c) an understanding of the business benefits to be delivered by the new or revised approach and where the Asset Management System will play a key enabling role, such as planning (taking account of the current successful output and the need for minimal disruption of maintenance activities during transition to a new system or systems);
- (d) an understanding of any requirements for risk assessment, reliability or usage centred maintenance and control in the specification of maintenance, inspection and incident response activities;
- (e) a knowledge of good industry practice in application of information systems to support maintenance activities; input from the maintenance review activities by a panel of Franchisee engineers who review maintenance practice and asset performance and lessons from previous projects;
- (f) an understanding of the requirements of asset management plans that define how the asset management (and maintenance) activities will be planned and executed;
- (g) an understanding of the requirements for the Configuration Management Procedures and access to documentation and drawings;
- (h) an understanding of the requirements for performance monitoring, condition monitoring, surveillance and audit; and
- (i) an understanding of the DLR Limited/Franchisee requirements for management information].

The table below sets out the functionality which the Asset Management System will deliver.

Key: Core = integral part of the Core AMS. Optional Items a possible enhancement to the Core AMS to be funded by DLR Limited if such enhancement is required by DLR Limited.

Explanatory Note: The Core system represents only those elements of the SAP PLM module required to deliver Asset Management System to be provided for DLR pursuant to

Clause 11.9 of the Franchise Agreement Elements marked as Options are outside the scope and if required by DLRL will require additional funding.

	Long Term System Support Facility (by Supplier)
Core	The Asset Management System Software Package (AMSSP) supplier will provide a UK-based software defect rectification resource for first and second line support of the package.
Core	The AMSSP will provide configuration and training services on-site. Such completed work to form part of system acceptance.
	AMSSP Defect Management Function
Core	The AMSSP will have a front end defect entry and status facility suitable for use by user interface desk(s).
Core	<p>The defect entry capability will be flexible enough to enter defects (via Notifications) in terms of screens and layout. The user interface will be simple and quick to use and by its nature encourage workshop/repair staff to complete comprehensive records of work carried out. It will be possible to generate Asset status reports by user department..</p> <p>Note : As the AMS is standard SAP module elements the reporting will be via standard SAP reporting nomenclature.</p>
Core	The defect entry facility will enable at least a two-stage defect entry process so that a minimum can be entered by the user interface desk or front end function, and greater detail entered by the appropriate maintenance/repair function.
Core	The AMSSP will indicate planned maintenance outstanding or imminent on assets relating to reported defects.
Core	<p>The defect record will include: - unique number, caller and contact details, defect, priority, asset type, resolving department(s), *, part/serial number, actions taken, free text area, fix, time and resources used.</p> <p>* Note for clarity Risk assessment as such is not an integral capability. Comments as to risk can be subjectively entered by the text but there is no auto risk assessment function.</p>
Core	The system will include a user defined catalogue of job reporting/coding structure to aid simplification of the correct reporting of defects.
Option	Subject to having the appropriate authorisation and technology in place to access the SAP server, specified users will be able to initiate defect requests.
Core (With an Option as above to	Any (authorised user) person creating a job will be able to view the job's status,

gain remote access)	
Core	The AMSSP will produce job cards for all unplanned jobs/failures/repairs.
Core	The AMSSP will have the capability to record all the materials used on each created job (planned and unplanned).
Core	The AMSSP will have the capability to record all man-hours elapsed on each created job (planned and unplanned) and include details of individuals carrying out the work.
Core	The AMSSP will have the capability to enable responsibility for failures to be allocated to individual systems/contractor.
Core	The AMSSP will support the import and export of defect requests to external suppliers and collect defect resolution reports to/from external suppliers. This supplementary data can be attached and / or entered manually only in text form via a range of media eg fax, letter
AMSSP Planned Maintenance Functions	
Core	The AMSSP will have the capability to enable maintenance works to be scheduled and record the planned maintenance activities including a graphical planning board to enable the supervisor allocating the maintenance activities to the workforce to ensure as far as reasonably practicable a balanced schedule is maintained.
Core	The AMSSP will produce standard format works order printed job cards for all Planned Preventative Maintenance (PPM) activities when requested and / or as required.
Core	The AMSSP will record and manage the progression of all unplanned maintenance activities
Core	The AMSSP will have the capability to report vehicle availability against vehicle utilisation based on the reports and works orders against individual vehicles which record their out of service time..
Core	The AMSSP will support standardised enquiries on a part number, serial number, system or vehicle basis, within specified times and / or dates. The system will incorporate standard "call up" type reports and also have the ability for operatives to devise their own reports with only minimal training.
Core	The AMSSP will store all parts (entered) against particular works orders and assets and / or storage locations.. The AMSSP will be able to provide a history of components/subassembly location.
Core	The AMSSP will be able to track warranty of a components/subassembly and costs associated with repair work Warnings are able to be produced for parts still in warranty if these require repair.

Core	Each asset or component (when selected) will its own record of time in use, or mileage in service, as appropriate, or other condition status.
Core	The AMSSP will have the capability to accommodate the construction of asset structures with multi layer parent/child relationships. This is part of the integral Asset Register.
Core	The AMSSP will support the requirements for describing linear assets such as track and trackside infrastructure including track curvature. The methodology for such description for example .by reference to track chainage or to physical named assets such as station to station . See also Option which follows.
Option	In relation to the item above, the AMSSP can be adapted to interface with GPS or similar locating systems. If third party software proposed must be integrated by AMSSP supplier and priced.
Core	The AMSSP SAP offers an integrated stores management and procurement facility This will enable the generation of costings for maintenance per asset/component/area. The AMSSP will be interfaced with and offer data transfer (as required by the Franchisee) with SAP/the Franchisee's Accounting software.
Core	The AMSSP facility allows Part numbers and part descriptions to be identical to those in the stores systems as they utilise a common database. As a new part number is added/cost per item generated this will be fully synchronised with the AMSSP (via the common data base).
Core **	Standard data entry is via keyboard
** Option to item above	As an option booking in / out items from stores via bar code readers and possibly with swipe card validation, light pens and the like. Also it is possible to set up the process such that only components listed on a "kit of parts" identified as required for that task.
Core	The AMSSP will enable the Booking out components from stores to be linked to the individual job records. This will generate comprehensive components used records.
Core	The AMSSP reporting function will support generation of work reports and versus KPIs.
Core	Planned maintenance planning should take account of reliability or usage of assets. Planned maintenance requirements of assets can be built in to the maintenance plan either on time based or usage based approach. The AMSSP can then be programmed to call for the maintenance plan as required.
	Technical Specification
Core	The AMSSP will use industry standard operating systems and databases.

Core	The AMSSP User workstations will be able to operate with Microsoft Windows but thin client architecture..
Option	<ul style="list-style-type: none"> The core AMSSP will require enhancement via AP Mobile to support the use of PDAs for mobile workforces.
Core	<ul style="list-style-type: none"> The AMSSP will maintain a secure audit trail of maintenance actions.
Core	<ul style="list-style-type: none"> The AMSSP will be backed up on a daily basis as well as on line activity logs being run which allows the system to recover the majority of data between the daily back ups. A recovery facility will be provided such that recovery is normally possible within 48 hours .
Option	The core AMSSP is based on desktop pc applications. Use of touch screen and / or PDA Technology to increase the speed of data input is available as an Option..
Core	The AMSSP System will support specified /authorised users at multiple locations across the organisation where the local area network enables such access to the SAP server..
Core	User access will be controlled (as required by the SAP Licences) by function, location and individual password. Users will have their own individual account which will define the level(s) of access permitted depending on their role and training.
Core	The AMSSP will provide user configurable reports based on the standard SAP reporting system.
Future Business Requirements	
Option	Option to use barcodes or RFID (Remote Feed In Device) on assets and to update them by PDAs.
Option	Option to support downloading of job descriptions to PDAs.

In the Control Centre, the use of the new Asset Management System will enable the control technicians to raise work requests for all Franchise Assets (excluding Software and Intellectual property), and for the maintenance teams to carry these forward into work orders, obviating the need for duplicate defect report numbers and giving a single view across the Railway of all defects or maintenance activities. Work planning and scheduling will be carried out on a single integrated Asset Management System which will give managers greater visibility of outstanding work, and forward committed resources.

2. **Implementing and maintaining an Asset Register within one year of the start of the Franchise**
- 2.1 **Implementation plan for the Asset Management System**(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
- 2.2 **Maintenance of the Asset Management System this is an obligation under Clause 11m the AMS Regime and the AMS Strategy**

2.3 **Recording details and descriptions of Assets**

The implementation of the SAP based AMS will provide the Asset Register required by the Franchise Agreement. The Asset Management System will cover the categories of Assets identified in paragraph 1.1 above. The implementation process will define a logical hierarchy that covers assets in all categories identified or defined during the implementation process. An indicative description of the Franchise Assets and a possible associated hierarchy is given in the infrastructure diagram below. The precise definition of hierarchies will take place as part of the Business Blueprint phase of the implementation when workshops will be held with relevant stakeholders to identify and capture their detailed requirements

The following figure will be refined and developed further as the AMS design development and consultation process proceeds

3. **DLR Limited Access to the Asset Register**

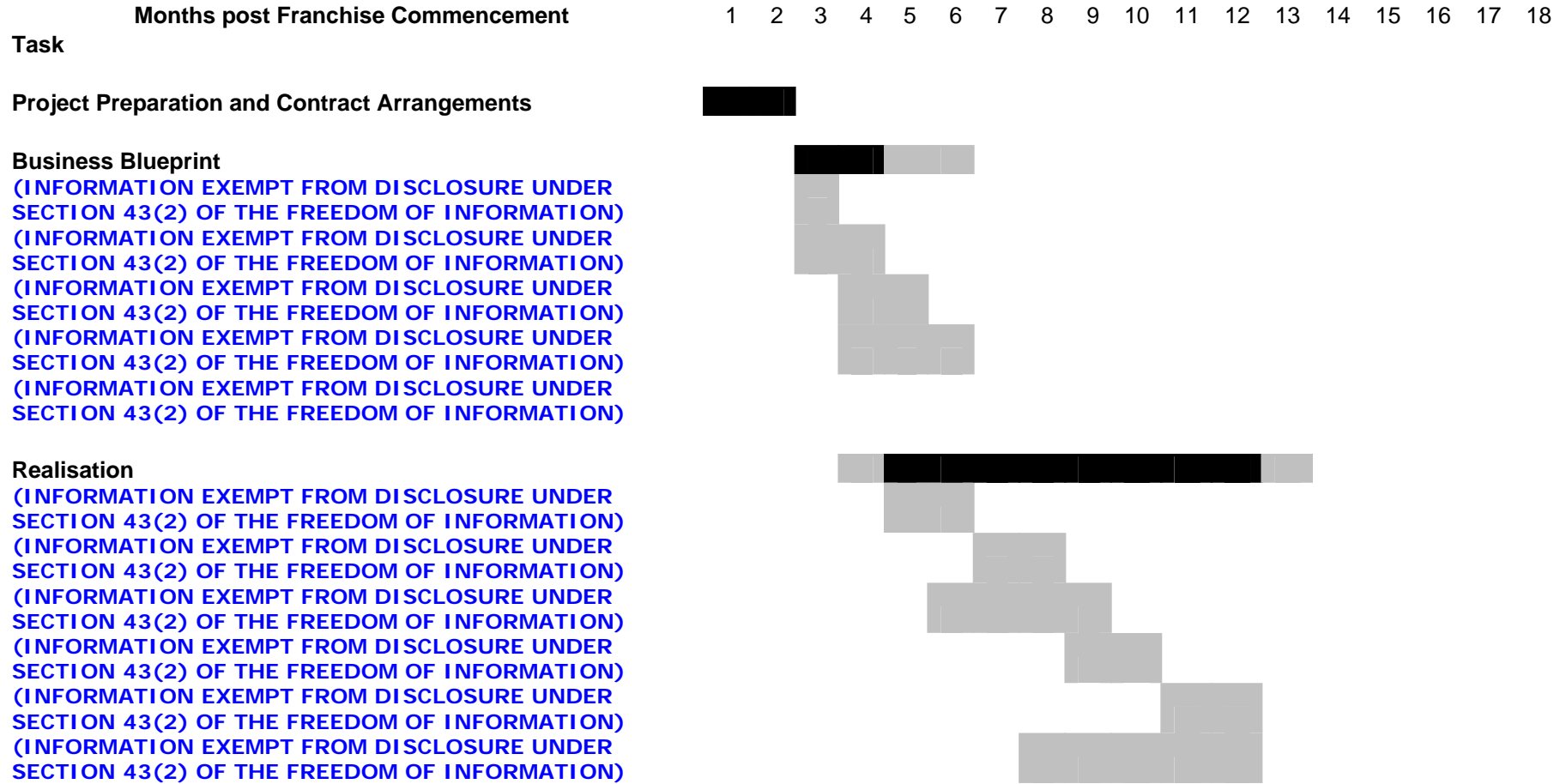
During the Blueprint phase of the implementation, the Franchisee will hold a separate workshop with DLR Limited representatives to agree DLR Limited requirements for access to SAP and for any variation from, or addition to, those reports required by the Franchisee. The Franchisee anticipates that DLR Limited's needs will be aligned with those of the Franchisee eg DLR Limited will want to look at performance and problems of different classes of Franchise Assets with a number of standard reports but will also require the ability to generate ad hoc reports on occasion.

The Asset Management System will be held on an asset management host server. This will be connected across the local area network to the control room workstations, the Poplar FLRT workstations and the Becton workstations. DLR Limited will have access to the asset management host server for the purpose of making enquires from the server.

APPENDIX 1

Asset System Project Schedule

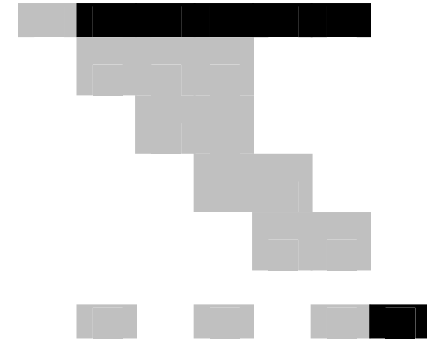
Asset Management System Outline Implementation Schedule



Final Preparation

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE FREEDOM OF INFORMATION)
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Go Live



**Part 8 – (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE
FREEDOM OF INFORMATION)**

1. (INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE
FREEDOM OF INFORMATION)

Part 9 – First Annual Maintenance Plan (Draft)

(INFORMATION EXEMPT FROM DISCLOSURE UNDER SECTION 43(2) OF THE
FREEDOM OF INFORMATION)